DOCUMENT RESUME

ED 323 689 EC 232 116

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TITLE Leadership: Making Things Happen.
INSTITUTION Indiana State Dept. of Education, Indianapolis. Office of Gifted and Talented Education.; Purdue Univ., West Lafayette, IN. Gifted Education Resource Inst.
PUB DATE Mar 90
NOTE 22p.; A monograph prepared for the Leadership Accessing Program.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Behavior Theories; Bibliotherapy; Communication Skills; Educational Games; Elementary Secondary Education; *Gifted; Individual Characteristics; *Leadership; Leadership Qualities; Leadership Styles; *Leadership Training; Self Concept; Simulation; Student Characteristics; *Student Leadership; *Teaching Methods

ABSTRACT

This monograph presents activities and guidelines for developing leadership training programs for gifted and talented students. Three theories of leadership are discussed: trait theory which assumes that one is either born with leadership talent or one does not have it; leadership style theory in which the patterns of leadership are categorized as democratic, autocratic, and laissez-faire; and situational leadership in which individuals are seen as having leadership ability that can be observed in specific situations. An examination of the leadership literature and biographies of successful leaders reveals several characteristics: self-understanding, self-acceptance, self-awareness, verbal effectiveness, listening, predicting skills, decision-making skills, and creative problem solving. Specific leadership activities are presented, identified by grade levels. Bibliotherapy is presented as a method of developing communication skills and stimulating self-awareness. Two stories are used to demonstrate the use of bibliotherapy--"The Giving Tree" by Shel Silverstein and "The Fall of Freddie the Leaf" by Leo Buscaglia. Simulation is discussed as another tool to develop leadership, with a description of a sample simulation game called Planet Nova, in which students colonize a new planet and affect its growth. Includes 17 references. (JDD)

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ED323689

Leadership: Making Things Happen

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A Monograph Prepared for the
Leadership Accessing Program

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March 1990

Introduction

There is growing interest in leadership development in programs for the gifted and talented. The Marland Report of 1971 reminded us forcefully in its definition of giftedness that some youth have unusual potential for leadership, and that educational programs should be developed to nurture leadership talents. However, schools were slow to respond. All of the vital work during the 1970's and early 1980's in gifted education focused on the intellectually gifted and the academically talented. Programs addressing leadership talent were rare.

Thanks to the efforts of Dr. Dorothy A. Sisk and a few other researchers/ developers, new programs began to emerge in the 1980's to identify and nurture leadership talent. Perhaps there is an increasing awareness that our country and the other nations of the world need leaders to guide us in grappling with and finding solutions for the great problems that confront us domestically and internationally.

Dr. Sisk has developed excellent concepts and a guiding structure for leadership programs. Her experience in the programs at the University of South Florida at Tampa has provided the base for a new understanding of leadership talent and its development. This monograph presents a wealth of activities and guidelines for all who wish to develop new programs in leadership training or who wish to incorporate leadership training into ongoing programs for the gifted and talented.

Brief Biography of the Author

Dorothy A. Sisk received her Ed.D. from the University of California at Los Angeles. From 1976 to 1979, she served as the Director of the United States Office of the Gifted and Talented where she played an instrumental role in leadership in gifted education. She is currently a professor at the University of South Florida, where she serves as Director of the Center for Creativity, Innovation, and Leadership and coordinates teacher training in gifted education. Editor of *Gifted International* and a member of the Advisory Board of *Gifted Children Monthly*, Dr. Sisk is the current Executive Administrator of the World Board of the National Association for Gifted Children and author of numerous articles and papers. She has coauthored *Leadership: Making Things Happen* with Doris Shallcross, and most recently authored *Creative Teaching of the Gifted*.

Leadership: Making Things Happen

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Leadership means different things to different people. A comprehensive review of the literature on leadership reveals that there are just about as many definitions of leadership as there are people who write about the topic. For example:

> "Leadership is the process of influencing the activities of an individual or a group in efforts toward goal achievement" (Hersey & Blanchard, 1977).
>
> "Leadership is clearly a role that leads toward goal achievement, involves interaction and influence and usually results in some form of changed structure of behavior of groups, organizations, or communities" (Lassey & Fernandez, 1976).
>
> "Leadership is an ability which may lead to a better job, to more security and self-confidence, and to greater service to society as a whole" (Richardson & Feldhusen, 1987).

Theories of Leadership

When leadership theory is being discussed, three theories stand out: trait, leadership style, and situational leadership.

Trait Theory

The trait theory is sometimes referred to as the "good old boy theory" or the "great man" theory because it assumes that one is either born with leadership or one does not have it. When the trait theory was in vogue, there were numerous checklists of leadership characteristics to ascertain whether or not one possessed leadership. Some of the traits that are considered part of leadership, according to Stogdill (1974), include personal characteristics such as intellectual capacity, achievement, responsibility, participation, and status. Stogdill also identified situational factors; these included mental level, status skills, needs and interests of followers, and the objective to be achieved. Stogdill reported that these four situational factors made leadership an active process and concluded that leadership was more than the possession of a combination of traits. Stogdill summarized his work by concluding that leaders acquire status by actively participating with followers, and by demonstrating that they can facilitate the completion of a task.

The various traits of leadership also interact with one another and are influenced by different work settings. For example, in some work settings it is very helpful for the leader to be quite supportive and to include others in the decision-making process. However, in other work settings this type of leadership behavior might be time-consuming and counter-productive to getting the job done.

In thinking about leadership as a trait, it is also helpful to examine the various roles that a leader might employ. Maintenance roles, for example, include the leader who makes compromises (compromiser), the leader who gives recognition to others (facilitator), the leader who helps to minimize disagreement (harmonizer), the leader who reflects the mood and group process (reflective-observer), and the leader who keeps the group on time, on task, and encourages everyone to participate (gatekeeper).

It might be helpful for you to think about these roles and take a quick accounting of your own leadership. Remember high is 5 and low is 1. Rate yourself accordingly:

Maintenance Roles

High				**Low**
		Compromiser		
5	4	3	2	1
		Facilitator		
5	4	3	2	1
		Harmonizer		
5	4	3	2	1
		Reflective-Observer		
5	4	3	2	1
		Gatekeeper		
5	4	3	2	1

All of these maintenance roles can be either positive or negative in a particular group setting. An effective leader must be able to know when to use the roles appropriately.

Another helpful way to examine leadership is to identify various roles that are used to accomplish tasks. These include the leader who is prepared to share relevant facts and information (the information giver), and the leader who seeks relevant information (the information seeker). Also valuable is the leader who is the initiator, or the group member who starts tasks and suggests procedures, or the synthesizer who polls the group to achieve consensus or agreement. Other roles include the clarifier who interprets ideas and suggestions, the summarizer who synthesizes for the group, the recorder who holds information, and the energizer who gives the group power by reflecting excitement and interest.

Again, think about these various roles and indicate where you are on a 1-5 Likert-type scale. Remember 5 is high and 1 is low:

Task Roles

High				**Low**
		Information Giver		
5	4	3	2	1
		Information Seeker		
5	4	3	2	1
		Initiator		
5	4	3	2	1
		Synthesizer		
5	4	3	2	1
		Recorder		
5	4	3	2	1
		Energizer		
5	4	3	2	1

It must be remembered that all of these roles can be positive or negative. The roles become negative when inappropriately used. In a meeting, one individual may continue to seek information by asking numerous lengthy questions that serve to impede interaction among the other members and to antagonize many group members. The major point for a potential leader to remember is that the various

task roles should help to mobilize individuals or groups toward completion of a given task.

A training activity that can be used to stimulate better understanding of the trait theory is to prepare large cards that are tied on the backs of members. Each card has one of the traits written on it. The instructions are simple:

> Mill around discussing a given topic and interact with the group members according to the role that they are wearing on their backs. When you think you know the role you are wearing from the interaction with others, you may ask for identification by saying, "Am I the energizer?" If you guess incorrectly, you must continue to play until all are able to identify correctly the role they are wearing.

This activity stimulates the group members' observation skills and helps sensitize them to the various roles. The activity works best if the topic or subject to be discussed is timely, such as abolishing abortion, using federal and state funds for private schools, abolishing the use of Graduate Record Exams for admission to graduate programs, or abolishing busing of minority children.

Another activity for Grades 4-12 that stimulates better understanding and use of the various roles is to write the roles on 4 x 5 cards and have the cards placed in a large circle on the floor. Then, ask the students to circle around the cards until a signal is given to stop. Each student is asked to play the role on the card where he or she has stopped. At another signal, the students can be asked to exchange cards with the person to their left or right and to continue observing.

After completing activities such as these, it is very important that the group discuss the activities with questions like this:

1. Did you find your role difficult or easy to play? If easy, is this a role that you use in your school and home life? If difficult, do you have any ideas why this difficulty surfaced?
2. Could you identify the roles that others were playing?
3. Which of the roles were ones that you need to work on?
4. Which of the roles interact to help a group get a job or task completed? Can you give examples from your school and home life?

Before leaving the topic of leadership as trait theory, it is important to note that an effective leader is familiar with all roles and is capable of taking on the different roles when appropriate.

Leadership Style Theory

In leadership style theory, the patterns of leadership are usually categorized as democratic, autocratic, and laissez-faire (after the classic work of Lewin, Lippitt, and White in 1939). When you think of autocratic, you no doubt think of bullying, unyielding behavior, reminiscent of drill sergeants and others who see leadership as directive behavior. Laissez-faire behavior probably calls to mind individuals who just stand by and indicate that they are not in charge. The classic example of laissez-faire is students who do not take responsibility for their own learning and shrug their shoulders as if to say, "We're not in charge." The last pattern of behavior, the democratic, can be identified by acts of voting or seeking and valuing the opinions of everyone in a group.

The work of Lewin, Lippitt, and White (1939) has been expanded upon by a number of individuals. The most notable work is Tannenbaum, Weschler, and Massarik (1961), who found that leadership can be viewed on a continuum with boss-centered leadership on one end and subordinate-centered leadership on the other.

Another example of viewing leadership as a style comes from McGregor (1960), who identified what he called Theory X and Theory Y. In Theory X, the power of leadership is thought to stem from the power of position and from subordinates or followers who are lazy and unreliable. Theory Y conceptualizes leadership as belonging to the group. Followers and subordinates are considered creative and self-directed if properly motivated. Theory X corresponds to the authoritarian attitude, and Theory Y corresponds to the democratic. McGregor's work stimulated the work of others who created a third type of leadership theory, situational leadership.

Situational Leadership

In situational leadership individuals are seen as having leadership ability that can be observed in specific situations. One of the most popular situational models is that of Hersey and Blanchard (1977). They speak of task behavior, relationship behavior, and effectiveness. Hersey and Blanchard (1977) suggest that there are different types of maturity. Job maturity, for example, means that the learner or group member understands the task and can be characterized as competent, motivated, willing to assume responsibility, and achievement-oriented. Psychological maturity according to Hersey and Blanchard includes feelings of self-respect, self-confidence, and self-esteem. Thus, the learner or group member cannot fully function if there are no feelings of individual self-worth.

One way to apply the Hersey and Blanchard model to leadership development is to view the leadership process as an interaction of the leader and his/her action and the maturity of the group. The attitudes and behavior of followers

or learners can cue the leader to interact accordingly. With new learners or new group members, the leader focuses on getting the job done and explaining the job or task. As the new employees or students learn the job, the leader moves toward more independence.

In their books, *The One Minute Manager* (Blanchard and Johnson, 1982), *The One Minute Mother* (Johnson, 1983), and *The One Minute Father* (Johnson, 1983), Blanchard and Johnson define leadership by delineating three activities: 1) the one-minute goal setting, 2) the one-minute praise, and 3) the one-minute reprimand. Application of Blanchard and Johnson to education would involve teachers checking to see that their students understand the goals or reasons for the task to be accomplished. The teacher would then emphasize direction and support to new learners. The one-minute praise would call for the teacher to find students doing something correctly and well, and to give immediate feedback for the specific behavior. The one-minute reprimand would be used when the students do not do the task correctly or misunderstand the task. If the students truly do not understand, then the teacher would calmly go over the material and clarify the goals and necessary steps to successful completion of the task. Then the teacher would acknowledge the individual student's worth, value, and potential. It is important for teachers to remember that Hersey and Blanchard envisioned reprimands being given to mature followers or students who already know how to do a task, not to trainees.

The following activity that Sisk and Shallcross (1985) suggest for use with adolescents can help clarify the application of the Hersey and Blanchard model:

> John plays quarterback on the varsity football team. The night before the big game, his parent finds him sitting in a car in front of the house drinking beer with his friends. Become the parent and think of a one-minute reprimand. What would you say? What would be your response? Were you specific in your response? Did you concentrate on feelings and praise?

Blanchard and Johnson stress the use of praise to develop the leadership of others.

Specific Leadership Skills

An examination of the leadership literature and biographies of successful leaders in a number of diverse fields reveals several characteristics of leadership: self-understanding, self-acceptance, self-awareness, verbal effectiveness, listening, predicting skills, decision-making skills, and creative problem solving. Several of these leadership skills will be highlighted, and specific leadership activities will be identified for different grade levels.

Self-Understanding

Leadership in today's world calls for self-understanding, self-acceptance, and self-expression. Teachers can help students examine how they see themselves and evaluate themselves in relationship to others. Self-understanding is defined as how I feel about myself and what I know about myself: who I am, what I am capable of, and what my strengths and weaknesses are.

One simple self-understanding activity appropriate for all age groups is to ask the students to think of themselves as musical instruments and then describe the instrument.

For a group of 6-year-olds, a drum, a trumpet, and a piano were used. When asked to describe the instruments in one word, the children said strong, loud, and busy. A high school group of students who were asked to do the activity said forceful for a drum, blatant for a trumpet, and versatile for a piano. The notion behind this type of projection is that when students describe something, they are indeed describing themselves.

A favorite self-understanding activity often used in leadership seminars for students at the University of South Florida's Center for Creativity, Innovation, and Leadership, is that of boundary breaking. In this activity, the students are instructed to answer simple questions intuitively or with the first words that pop into their heads. If they cannot respond, they may pass and will be asked to respond a second time. Boundary breaking works best when students follow a round robin routine, left to right or right to left, each student responding in turn. No judgment is made, and an atmosphere of acceptance is encouraged. Following the use of a series of questions, the teacher might ask the students what they learned about themselves and others. Here are some sample boundary breakers:

Grades K-3

If you were asked to choose your favorite food, what would you choose?

If you could have any pet, what would you select?

If you were to choose your favorite toy, what would it be?

If you were asked to select a flower, what would you choose?

If you could hear any story, what one would you choose?

If your family were planning a one day outing, what would you like to do?

Grades 3-6

If you were given an opportunity to visit any country, which would you visit?

If you could be your favorite character in a book, whom would you choose?

When you think of your favorite color, what do you think of?

If you were a used car, what kind of car would you be?

If you were to rename yourself, what name would you select?

Grades 6-8

When you think of your best friend, what characteristic comes to mind?

When you are having a great time, what word describes your feelings?

When you think of your strengths, what one strength is most prominent in your mind?

If you were shipwrecked, who would you want to be with you?

If you could delete any one school subject, what would you delete?

If you could become a famous character in history, who would you be?

Grades 9-12

When you evaluate yourself, what would you like to change?

If you could give a present to the world, what would it be?

If you had a wish for yourself, what would you wish?

If you had a wish for your country, what would you wish?

What characteristic do you most admire about others?

If you were writing your epitaph, what would you want people to say about you?

When you see yourself in the future, say four years from now, what do you see?

If you could be your favorite color, what color would you be?

If you could change something about school, what would you change?

Each time students talk about themselves, they experience self-affirming or self-condemning messages. By experiencing unconditional acceptance in activities such as boundary breaking, students can grow in self-understanding. Carl Rogers, a noted psychologist, talks about a real self and an ideal self. Rogers (1980) says that we can shape our own personality, but first we must know who we are and accept ourselves with our strengths and our weaknesses. As students interact in the use of boundary breaking questions, they can define and redefine themselves. Leaders manifest themselves through self-expression. Through exploring self-understanding and communicating with one another, teachers can lead students to experience how these two leadership skills interact.

Communication Skills

Communication is very important to any relationship, but it is essential to leadership. Rogers (1961) hypothesized that there are three qualities that are essential to constructive communication: genuineness, nonpossessive love, and empathy. Genuineness was defined by Rogers (1961) as honesty and openness about one's feelings, needs, and ideas. Nonpossessive love was defined as acceptance, respect, and support for another person and an attempt to understand the points of view and perspective of others. Empathy was defined as the ability to really see and hear another person and to understand the other's perspective.

Here is a sample activity for Grades 3-12 designed to increase nonverbal communication between students and to offer an opportunity for them to verbalize their responses:

> Two students sit side by side with a large piece of paper and markers in front of them. The students take turns drawing something on the paper. The drawings can be separate, a part of, or added to the drawing of the other student. After about 20 minutes, or when the picture is finished, the two students can talk about the drawing. They can ask questions, such as why the person drew, added, or changed something on the picture. The only rule is to be honest in their responses.

This communication activity provides practice in listening effectively and responding to messages sent by other students. The drawings can be hung on the wall in a row and everyone encouraged to see what others have done.

Students can rate their pictures using the following questions:

1. Were the expressions of one's thoughts accurate or inaccurate?
2. Did each student understand what the other one was trying to say in the picture?
3. Did you say something totally different from what you intended? How did you resolve this misunderstanding verbally?

Bibliotherapy to Develop Communication Skills

The use of bibliotherapy to develop communication skills is very effective. Bibliotherapy can be simply defined as getting the right book to the right child at the right time about the right problem. Two favorites of many students are *The Giving Tree* by Shel Silverstein (1964) and *The Fall of Freddie the Leaf* by Leo Buscaglia (1982). We can use the Taylor model (1968) to structure the activity. When one examines the behavior of leaders, one sees that they are planners, predictors, forecasters, decision makers, evaluators, communicators, creators, and knowers. As you will see, each type of thinking has at least three questions that teachers can use reading these books, with small groups of students or with the entire class. *The Fall of Freddie the Leaf* deals allegorically with issues of life and death and is appropriate for Grades 6-12. *The Giving Tree* is another allegory appropriate for Grades K-12. Bibliotherapy sessions take about twenty minutes and serve to stimulate self-awareness and to develop communication skills. Here is a sample:

The Giving Tree by Shel Silverstein

Summary: "Once upon a time there was a tree . . . and she loved a little boy. Every day the boy would come to the tree to eat her apples, swing from her branches, or slide down her trunk . . . and the tree was happy." But as the boy grew older, he began to want more from the tree, and the tree gave and gave and gave. This is a tender story, touched with sadness, aglow with consolation. Shel Silverstein has created a moving parable for readers of all ages that offers an interpretation of the gift of giving and a serene acceptance of another's capacity to love in return.

Leading Questions

Academic:

1. Who made the tree happy?
2. Name three things the boy did with the tree when he was very young.
3. Name three things the tree gave the boy as he grew older.

Planning:

1. If you were the tree, what would you plan to say to the boy when he said that he wanted a boat?
2. Instead of giving everything she owned away, what other ways could the tree plan to make herself happy?
3. What would have happened to the story if the tree had said "no" to the boy's requests? Plan the steps to the new story.

Creative:

1. In what ways could the boy have met his needs without the tree?
2. Put yourself in the tree's place; how would you have responded to the boy's requests for a boat?
3. Make up a new ending for the story. What would have happened if the tree had told the boy to go elsewhere for the things he asked for?

Predicting/Forecasting:

1. Who would the boy have turned to if the tree had not been there for him?
2. How would the tree have felt if the boy had never come back?
3. If the story had been reversed and the tree had asked the boy for everything he had, how do you think the boy would have responded?

Communication:

1. How did the boy make the tree happy when he was very young?
2. What do you think the tree's thoughts were when the boy asked for lumber to build a house?
3. When the boy took the trunk to make a boat "the tree was happy . . . but not really." What would some of the reasons for this be?

Decision-Making/Evaluation:

1. Was the tree right to give the boy everything he asked for?
2. Do you think the tree was being selfish in the story? Why?
3. What did you learn about giving from this story?

The Fall of Freddie the Leaf by Leo Buscaglia

Summary: *The Fall of Freddie the Leaf* deals with the issues of life and death as they might be explained in simple fashion to a child. The author tells how Freddie and his companion leaves change with the passing seasons and finally fall to the ground as the first snow covers the landscape. During the changing seasons, Freddie learns that he is unique and has a "reason for being." Finally he faces the fact of death only to unknowingly become part of the continuing process of life. Buscaglia uses this allegory to illustrate the delicate balance between life and death as winter once again holds the beginnings of new life to follow in spring.

Leading Questions

Academic:

1. Name some of the purposes Daniel gave Freddie for his "reason for being."
2. What did Daniel tell Freddie concerning the change in color of all the leaves?
3. When Freddie said that he was afraid to die, what did Daniel tell him?

Planning:

1. If you were Daniel, how would you plan to answer Freddie when he asked about a "reason for being?"
2. How would you plan to explain the meaning of life to Freddie?
3. If Freddie had told you that he was afraid to die, what would be your plan to help him overcome his fear?

Creative:

1. Freddie learned that although all the leaves on the tree seemed alike, no two leaves were really alike. Describe some of the differences you would give to various leaves.
2. Many people came to the park in the summer to sit under Freddie's tree; make up a short story about some of them.
3. Since Freddie's end was actually a new beginning, how would you rewrite the last pages of the story to show this process of the continuation of life better?

Predicting/Forecasting:

1. Put yourself in Freddie's place, high up in the tree. What thoughts would go through your mind when you saw yourself changing color?
2. If Freddie had not had a friend like Daniel to explain things to him, how might he have discovered his "reason for being?"
3. How would you have told Freddie about dying?

Communication:

1. What do you suppose went through Freddie's thoughts when he was the last leaf on the tree?
2. What do you think Daniel was really trying to say to Freddie when he was answering Freddie's question, "Why were we here at all if we only have to fall and die?" Answer this question in your own words.

3. Explain the words, "the Beginning" found in the last picture in the book. This picture shows a tree without leaves, but with a bird resting on a branch.

Decision-Making/Evaluation:

1. Do you think Daniel was right in saying that "a reason for being" was "to make things more pleasant for others?" What would you have said?
2. Does what Daniel said about differences (when the leaves all turned different colors) also apply to people? In what ways?
3. After reading the book, what do you think Freddie learned about life? What did you learn?

Simulation as a Tool to Develop Leadership

Simulation is a particularly effective tool for developing leadership. Simulation is effective because it affords opportunities:

1. for predicting and forecasting
2. for manipulating social paradigms in psychologically safe environments
3. for discussing evaluation and decision-making through processing
4. for experiencing and directing change
5. for analyzing and discussing individual values as they relate to group values. (One of the more exciting topics for students interested in developing leadership is the future.)

The following simulation game was developed by a group of teachers in a leadership workshop at the University of South Florida to encourage leadership development in students at the middle school and high school level, or Grades 7-12. The game is a favorite with students and can be played over a continuous 3-hour period or for an extended period of time in short sessions of 45-minutes or a classroom period each.

A Sample Simulation Game: Nova

Name: Planet Nova

Problem:

How many people can live on Earth? Is there a limit? No one knows for sure. Many years ago, Thomas Malthus predicted that a limit would be reached soon. He predicted that population would increase until food ran out.

Objectives:

Because we do not experiment in the laboratory with human populations, we do not understand the growth of human populations. You are going to colonize a new planet. You will be in the enviable position, not only of understanding population growth, but also of having a vital part in affecting that growth.

Scenario:

The planet Nova is very much like Earth in size, climate, and geography. There is only one land mass, smaller than Earth, and completely surrounded by a fresh water sea. There are plants and animals on Nova, but there is no animal like man. The natural state of Nova is similar to that of Earth. Some of the land and climate is suitable for farming. Some of it is barren grey rock, and some of it is dry, hot desert. There is a good supply of one mineral deposit called Tintalum. Scientists from Earth have discovered that the metal obtained from this ore is superior to steel. However, they also have discovered that it is difficult to mine since it is usually located under a thick layer of hard rock. There is also one insect on Nova that scientists from Earth have not been able to eliminate. This insect attacks both plants and animals. It has a voracious appetite and eats all of the plants that grow on Nova; its bite causes a disease in animals known as flebitis. Doctors from Earth believe that this disease may also be carried to man.

Characters:

There are six players on each team. One will be the observer who will record the progress made by his team at the end of each round. The other five players will be part of the Management team sent from Earth with the task of managing the planet for the next 50 years. There will be management experts for Research, Education, Environment Control, Agriculture, and Engineering.

Point in Time:

It is the year 2050 A.D. You are part of a group of 100,000 people who have been selected to colonize the planet Nova. No human being has ever lived on Nova, and you realize that you will have problems similar to those the pilgrims faced when they first landed in North America. But you are eager to try this experiment because of your sense of adventure. Currently, it is too crowded on Earth, and there is the chance of a better life on Nova. Also, you have been told that Nova is a beautiful planet with a pleasant climate and that you will be able to have more leisure time outdoors.

Resources:

Classroom setting with blackboard for tabulating results. Each expert will be supplied with a card listing projects to select with the cost of each. The observer will have a card listing the points for each project.

Rules:

The game lasts 10 rounds. Each round represents five years on Nova. Read your project card and select the project you would like for Nova. You may select only one project from each expert. You may spend any amount of money you want as long as the total of the five projects does not exceed 10 mega-bucks. One mega-buck is worth about a million dollars. Record your selection and the cost on the record sheet.

Evaluation:

The game is completed at the end of the 10th round and the group with the highest score is declared the winner. This group will be invited to Earth to be greeted by the various heads of state and applauded for their success.

Processing:

Do you feel the inhabitants of Nova would be pleased with the state of their planet now?

Could you have accomplished the same results with less money?

Which set of values would you rather live with?

Do food and income points compare favorably with population?

If things continue to change in the same pattern for the next 50 years, will Nova be a good place to live?

How did you feel about having to give up your project because the consensus was for money to be spent in another area?

Do you think we have comparable problems in our own country?

Did your group do a better job of management than the others?

Do you feel as though you could pioneer and live on another planet?

What material things would be important to you if you had to go to a strange, uninhabited country?

Notes to Teacher:

The same project cards can be used for each player; however, the scores should be omitted from all but the observer's card. It would be interesting to graph the result of each round for visual feedback. Use four index indicators:

1. Population declines when more money is spent on education and research.
2. Income rises when funds are spent on engineering, research, and education.
3. Food prices rise when money is spent on agriculture and research, but fall when funds are spent on the environment.
4. The environment deteriorates when funds are spent on anything but the environment.

Sample Project Card for Use of the Observer:

Points:

Education

A. No project. -2

B. Build more schools for all age groups and for general, professional, and technical education. +4

C. Pay people to go to graduate schools of engineering, biochemistry, medicine. +6

D. Finance the Einstein Plan. This would send a few able people to earth to study at an advanced level and would also hook more television sets to the educational network. +2

Research

A. No project. -5

B. Conduct research to develop new varieties of corn, rice, and wheat with higher yields. +2

C. Conduct research to discover the cause and cure of "flebitis." +6

D. Conduct research to find more and better ways to mine Tintalum. +4

Environment

A. No project. -10

B. Construct more and improved sewage plants for city and factory wastes. +2

C. Finance the New Nova plan to buy areas around lakes and oceans to be used for recreation and build mile-high apartment buildings. +5

D. Equip more chimneys of homes and industries with anti-smoke equipment. +2

Engineering

A. No project. 0

B. Build more Tintalum Mines and purification plants. +3

C. Build more highways and railroads. +5

D. Construct new electric power plants. +2

Agriculture

A. No project. -2

B. Clear more land and prepare it for raising crops. +10

C. Import chemical fertilizer and pesticides. +2

D. Buy machinery to plant, cultivate, and harvest crops. +5

In any simulation game, students become involved in the seeing or sensing of problems. According to MacKinnon (1978), the roots of creativeness lie in becoming aware that something is wrong, or lacking, or mysterious. As students function as futurists in games such as Nova and are encouraged to take the long view, they report that they are charged with creating new visions of a better world. In thinking about the future by simulating Nova, the students actually encourage one another to solve problems and to actualize a brighter future.

This monograph has stressed two major premises: 1) leaders do not function alone, but operate within a context in which they are involved with other individuals, and 2) each person is the dynamic force behind his/her own growth with the help of supportive teachers. Through helping students develop their own leadership skills, teachers can assist students in developing new attitudes, opening new avenues for leadership development, and making things happen.

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